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ABSTRACT

In 1984, Bronx Community College (BCC) established the Minority Honors Program in Energy Related Curricula, a partnership between their academic honors program and the U.S. Department of Energy. The program's goal is to increase the participation of minorities in the fields of Computer Science, Electrical Technology, Engineering Science, Data Programming, and Nuclear Medicine Technology. The program operates as part of the college and is accountable to both the college and the federal agency. Students receive individualized counseling to help them develop life, job-search, and "employability" skills. Increased personal attention through tutoring, mentoring, special classes, and close supervision helps maintain the program's high retention rate. The government agency provides participants with paid summer internships and scholarships. The Department of Energy's Office of Minority Economic Impact provides funding, while the college takes responsibility for instruction, administration, and counseling. Program outcomes include greater self-esteem for students along with entry into energy-related employment or transfer to senior colleges. The program has afforded BCC greater visibility and a more positive self-image. (JSP)

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THE MINORITY HONORS PROGRAM IN ENERGY-RELATED CURRICULA

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ERIC SUMMARY

The results of a study of federal government and college partnership is reported. This was an assessment of the unique collaboration that has given minority students access to high-tech fields. The following discussions are presented: (1) the context of government/college collaboration; (2) what we did and whom we served; (3) how we did it; (4) program effects; and, (5) conclusions.

The overwhelming problems that drained the college's resources in the mid-eighties was the context out of which this partnership between a government agency and the college was fashioned. Higher education was perceived as inadequate and students were seen as going through a revolving door of open admissions and quick failure. The collaboration offered a ray of hope. Two agencies -- a college and an arm of the federal government -- sought to experiment in a joint project that gave deserving minority students to succeed in college.

The senior author took an existing honors program for minority students, defined the curricula into which few minority students have had access in the past and asked the federal agency to provide scholarship grants to enable Afro-American, Hispanic and Asian students to get their degrees in these high-tech areas.

The program combined an instructional component, a counseling component, and a career service component to converge on these students. These components were allowed to operate with minimum interference from the federal agency that funded the program. The federal agency took a back seat and let the college provide instruction and counseling to minority students. Needless to say, the federal agency's underlying interest in the partnership is based on a powerful fact of life: education provides the communities with a capable work force, with communities in which we can live and operate and ultimately with a prosperous marketplace and a good, solid base of taxpayers.

We found that the federal agency with the college as an equal partner provided minority youth academic and economic advantages. The most tangible contributions are the scholarship grants. At the same time, we also saw evidence of higher teacher morale, improved academic achievement and higher retention rates.

However, we also noted some limitations. First, the resources the government can be expected to invest can only take educational improvement so far. Programs must inevitably choose between serving a very few youth intensively or more youth superficially. Second, the strategic positioning of government resources is also limited. This collaborative program cannot bring fundamental change in how public higher education is delivered. This program is an "add-on", grafted to existing educational structure and is unable to effect other students in the system. The program does not purport to serve those most at risk--those with chronic attendance problems, histories of poor academic performance or other indicators of educational failure. In the long term, its greatest contribution was that it created the most influential constituency for public higher education --the federal government itself.

THE MINORITY HONORS PROGRAM IN ENERGY-RELATED CURRICULA

EVELYN RUBIO KISH

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The full impact of gains that have been made in enrolling minority students in higher education have been overshadowed by their high attrition rate. While Bronx Community College (BCC) is engaged in identifying factors that enhance minority retention, it is also concerned in underlining minority students' success in college which in the long run gives both an exemplary model effect and gives insight into why these minority students succeed. Community colleges nationwide are striving to strengthen the quality of their educational programs. A well-developed and visible minority scholarship program can contribute to the attainment of this important objective.

This minority program is a rare hybrid combining (1) an Honors program and (2) a partnership alliance working in collaboration with a government agency. The Minority Honors Program in Energy-Related Curricula is a scholarship program funded by a grant from the Office of Minority Economic Impact of the United States Department of Energy. Established in the Spring semester of 1984, it aims to increase the participation of minorities in the fields of Computer Science, Electrical Technology, Engineering Science, Data Programming, and Nuclear Medicine Technology. Although the project has remained small, it is heralded in its home environment.

I. CONTEXT

From the early 1980's into the present, colleges have been plagued by high absenteeism and skyrocketing dropout rates (Bowen and Lipkowitz, 1985). Colleges were perceived as no longer preparing students for productive employment or for any enterprise that required functional literacy. Finding a solution would require a greater intensity of effort and resources than could be expected from the educational institutions alone (Otterbourg, 1986).

Scrutiny of the problems faced by urban colleges led to an increased awareness that changes in society, such as the growth in single-parent families and two working-parent families, had further transferred responsibilities in counseling and disciplining students to the schools. Communities also became much more aware of the near-crisis levels of alcohol and drug abuse, unwanted pregnancy and debilitating depression among youth (Mahood, 1981).

A distinct, but related issue was high unemployment among urban minority youth. Unemployed youth were a drain on the community and high unemployment rates had both immediate and long-term dire consequences. It was becoming clear that solving the problem required renewed attention to the entire educational system. Government agencies began to ask how they could help the schools, a question that did not lend itself to a single answer (Passow, 1984; Spring, 1987). This heightening sense of crisis led, in this particular instance, to a collaborative partnership between U.S. Department of Energy and Bronx Community College. Participation in the

development of the program stemmed from a growing perception on the part of the funding agency that government has a responsibility to assist community colleges because of their potential contribution to the quality of life in the community. This program gave government the opportunity to respond to the community's needs through a vehicle that promised responsive and accountable operation.

II. WHAT WE DO AND WHOM WE SERVE

Since this collaborative program was developed as an adjunct to regular college curricula, it does not have to conform to strict "governmental requirements." The program has evolved from the interplay of the needs of the students, the availability of resources, the interests of the government and often, the initiative of the program administrator (the senior author). Nevertheless, program elements were developed that were particularly important to increasing educational and employment opportunities for minority students.

The program operates as part of the college and maintains a structure that is accountable to the college and the federal agency. The program holds classes and program activities within the college structure and calendar of activities. Students are subject to the same academic requirements demanded of all regular students. Classroom space, equipment, and faculty are provided by the college. The college is responsible for recruitment, course planning, and coordination. The impetus for developing and managing came from the senior author and the agency that contributed the monetary resources for the scholarship grants.

WHAT WE DO

Instructional Component

Of utmost importance to the program's orginators was the possibility of gaining access to academic environments that would normally be closed to minority students. Once a student is accepted into the program, he/she begins to work with the program administrator. The academic component has a specific focus: energy-related curricula. Participants are drawn from the student body and are selected on the basis of several criteria:

- high academic achievement as indicated by GPA of 3.00;
- focus on a major that is energy-related (computer science, nuclear medicine technology, engineering science, industrial chemical technology);
- some demonstrated interest and willingness to abide by the program's structure and requirements.

Instructors and counselors integrate the link between education, job preparation, and employment.

Counseling Component

The program serves small groups of students emphasizing individualized attention through close contact between students and the program administrator who also serves as the counselor. The counseling component emphasizes developing several types of skills:

- Life skills: such that will allow students to manage problems in their lives;
- Job-search skills: such as preparing for an interview and writing a resume, that will prepare students to find a job on their own.

o Employability skills: training in work-maturity skills that will assist students to function better at the work place.

The Career Counseling Office also run job fairs to acquaint students with area employers who may be willing to give them jobs. This office also takes students on field trips to company offices to give them a "feel" for the working place. The Office of Employment Counseling offers direct work experience by placement in part-time or full-time work.

Agency Participation

The government agency, through its national research laboratories, have provided paid summer internships to program participants. More importantly, its contribution has remained rooted in the mission of promoting, through scholarship grants, high quality education for minority students.

WHOM WE SERVE

Personal demographics. The per cent of males (60%) participating in the honors programs was greater than the percentage of females (40%). The ages of participants ranged from 19 to 28 with the majority (80%) in the 21 -25 years old range. Blacks (39%), Hispanics (47%) and Asians (14%) made up the ethnic composition of the program participants.

Academic Profile. Eighty-six per cent of the participants attended large high schools. At the time of high school graduation, 75 per cent of the honors program participants ranked in the upper 25 per cent of their classes. Their CUNY composite placement scores ranged from a middle 3rd quartile to a high 4th quartile. The majority (65%) of the participants scored in the upper quartile.

Student Characteristics

The typical honors students chose to attend the community college because it provided the desired programs (86%). For 93 per cent of them, the community college presently attended was the first college they had attended. About 92 per cent enrolled for 12 to 15 hours per semester. The majority of students (61%) attended classes during the evening. Many (89%) were working more than 20 hours per week. While carrying full academic load and working at part-time to full-time job, 92 per cent of the students were able to maintain 3.00 grade point averages on a four-point scale. The majority of the students (70%) were enrolled in transfer programs. Transfer to four-year colleges (65%) and job preparation (94%) were the primary educational objectives. Their outstanding goal for attending a community college was to earn an associate degree (96%).

Perceptions of Honors Programs. "More challenge" was the reason given by 84 per cent of the participating students for enrolling in the honors program while "scholarships" (97%) and "increased likelihood of admission to four-year senior colleges" (91%) also received high marks. Perceived activities and benefits of enrolling in a community college honors program included scholarships (94%) and special privileges (85%) such as special activities, honor roll mentions, and award banquets. Disadvantages of honors programs come from high self-expectations(58% percent) and high faculty expectations (57%). The honors program participants were somewhat academically challenged (67%) or challenged a great deal (91%). These statistics correlate closely with the percentage of students who had their expectations somewhat (51%) or entirely (89%) met by the program.

III. HOW WE DID IT

This partnership developed within the formal operational structures of both the college and the funding agency with both taking a visible role in the creation of the program. Funding formed the collaborative component from the agency's part while the instructional, administrative, and counseling component came from the college.

Management of collaboration

There is a strict delineation of responsibilities in the interactions between college and the funding agency. Since this program is neither exclusively school nor agency program, some arrangement for managing and bridging the two worlds had to develop.

Territorial boundaries were not allowed to prevent effective program operation; mutual trust was built through a series of collaborative efforts between BCC and the agency over a 9-year period. Trust and a sense of what each partner could be expected to contribute had developed over time. Each partner has a degree of autonomy that allows it to limit the degree of influence and control one can exercise over the other. BCC and the agency were most sensitive to each other's interests and limitations. By its participation, the agency acknowledges the school problems and offers general support for solving them, but the role is limited to responding to requests from the college.

In this collaboration the agency did not make its participation conditional on achievement of specific benefits to the agency. While the agency's motivation for contribution of money stems from the desire to increase the number of minorities in science and technology, the agency has never approached such efforts by directing the daily operation of the

program. The success of the program, which is wholly owned by neither the school nor the sponsoring agency, has depended on the quality and strength of the body that oversees the program. Responsibility for implementing a concept and operating a program came from the dedication and commitment of time and staff of the funding agency and of the college.

Program Stability

Program stability depends on the continuity and strength of staffing and on sustained funding. This program is beyond the "initiative" stage and no longer depends on "discretionary" funds. It is not, however, insulated from budgetary dissolution. Downturns in the economy could curb continuing support and could be reflected in decrease funding. For the most part, the financial support of the agency has been sustained and there has been a matching between the school's needs and the agency's resources.

Implementing and managing school/agency collaboration requires both innovation and persistence. When organizations from different sectors of society join to address a common problem, new rules and methods of interacting must be developed. In this collaboration, stability was maintained through considerable personal initiative of key staff of the college and the agency.

IV. PROGRAM EFFECTS

This collaboration can be expected to produce effects on three groups -- the students participating in the program, the school involved, and the participating agency.

Effects on Students

An important benefit of the program was the students' recognition that they could work successfully in the technologies that they might have been reluctant to enter or have been prevented from entering without the structure and support of the program. They have gained a head start in the technology world.

Related to this was the sense of success that many of these students gained from being appreciated and welcomed within such a select and prestigious environment.

Students also benefited from close and continuing contact with a variety of adults, administrators, faculty and counselors who were interested in their progress and future plans. The linkage heightened the value of school and reduced the chance of dropping out. The recognition of the limits of entry-level jobs has shown many of the students the need to gain further education, to obtain more interesting careers and to advance within their occupations.

The program's retention rate has been high and has remained constant since the program began. The program averages a miniscule annual attrition rate of.01 percent.

The project maintains contact with its graduates by mail and then follow-up phone calls to determine how they are doing one, two and three years out of the program The 1990 survey had a 80% response rate and revealed the following information:(a) 31% were attending senior college;(b) 45 % were fully employed.

Effects on BCC

BCC has assessed the outcomes and benefits of the program. The investigation suggests that the program has given the college better visibility and a more positive self-image.

Faculty and counselors gained from the opportunity the program offered them to develop curricula and to work cooperatively with other faculty. The faculty and counselors served as mentors and role models for the students. It allowed teachers and counselors to enhance their roles and give the students more intensive attention than they would be able to get under standard settings.

Effects on the Participating Agency

The agency perceives its contribution in terms of meeting a national mandate of increasing a trained pool of minorities in the technologies. In effect, the agency is a giver and the college is the receiver. The agency does not receive direct or immediate benefits in this partnership. But the agency does anticipate long-term benefits, such as improved public relations, a better-trained work force and improved social and economic opportunities for the minority students.

From the perspective of the funding agency, the collaboration also provided important, immediate benefits -- allowed students to be in college, gain work experience and job placement after graduation and gave access to the high tech world which was normally beyond their reach. This program gave the students the personal attention made possible by lowered student/faculty advisor ratio. Mentoring and counseling programs

strengthened the link between academic achievement and future economic and employment success.

V. CONCLUSIONS

Significance

This collaboration has been the catalyst for renewed interest in the education of the economically disadvantaged but academically promising students. There once was the growing concern that schools were not preparing minority youth for a successful transition into the work force. The agency has learned the critical issues facing public higher education and began to appreciate the complexities of educating minority youth.

This collaboration has provided youth with the direct evidence of the critical link between educational achievement and making a living, in terms of getting, keeping and procuring job in the high-skill tech fields. Because of the scholarship grants, minority students, many of whom would have limited opportunities, were placed in energy-related curricula. This partnership has also given students individualized attention that consistently rewarded excellence.

The initial concern was whether this partnership 's interventions could have sufficient educational or programmatic substance and whether they could have impact on students'lives. The interventions turned out to be intensive and substantial. The partnership did not capitalize on the widespread recognition engendered by this program. Too, there was no narrowing of emphasis toward serving the needs of the agency. The program did not replace the existing educational system but was designed to assist or augment the school's efforts. The government agency recognized that academic faculty and counselors would remain the primary providers of

instruction and counseling.

The agency came into the partnership with few preconceived notions and became more aware of the complexities of educating the urban poor. This collaboration has emerged as significant primarily because it acted as a catalyst for wider support for public higher education and provided the experiential evidence of the link between educational achievement and eventual employment.

There was no justification for the concern that collaboration might just be a paper tiger, might narrow educational opportunities or become unwelcome intrusions on the work of professional educators. We found that the partnership enhanced rather than replaced existing curricula.

Effects

The partnership made possible education in the technology areas where minorities have been underrepresented. Coaching and preparation on behaviors necessary to find, obtain and keep a job increased access to employment opportunities. Increased personal attention--through tutoring and mentoring, special classes and close supervision nurtured youth who were usually excluded from school support services. In addition, the program increased teacher morale. The government agency became a new, knowledgeable constituency for higher education.

Its Potential

This kind of collaboration has increasingly been heralded as an important avenue for improving the nation's schools. Its initiatives has placed public education on the agenda of both the government and the community. The partnership has, therefore, served as a catalyst for educational change. This collaboration has demonstrated innovation in the incentives they offer individual students. It has provided the resources

for scholarship support. The partnership has thus been a source of new incentives to keep minority students in school.

The agency, through its involvement, has enriched its knowledge of school issues as result of experiencing the problems facing schools first-hand, learning the complexities of issues in school reform, and confronting the need for effective and cost-sufficient solutions to school problems. This well-grounded understanding, coupled with the political clout that the agency wields, can make government a formidable and effective advocate for public higher education. This partnership has the potential for filling an important gap in public support of higher education. This is a model that is beginning to see wide replication.

The Future

Beyond its effectiveness and current impact, the key questions that remain about this collaboration concern future viability. The immediate future will witness the emergence of a number of efforts to replicate promising models. We anticipate critical changes in the nature of these collaborations. New partnerships will likely be established as part of larger community-wide efforts to improve education. While individual pairings will continue to be an important form of participation in education, such efforts will be melded into larger initiatives that seek to improve the delivery of education in general.

We also expect more collaborations to be established with clearly articulated educational and employment goals. It is unlikely that these partnerships will be dissolved if goals are not quickly achieved. Sponsoring agencies have grown much more sophisticated about the process of change in education and no longer expect quick-fix solutions. Since

the problems were a long time in the making, the partnerships created to address such problems, are intended to operate for the long haul.

It is unlikely that enthusiasm that has energized these good intentions may be short-term and crisis-driven. New economic problems may capture the interest of the government and it could be that the pace of institutional change in education would again assert its deliberate course. However, educational problems are now being identified as potential economic catastrophies. And future economic issues are being re-defined as educational improvement issues.

At the same time, agency representatives who have become involved in education are learning how difficult it is to make the system more responsive to their concerns. Will this growing knowledge of education help the agency to be patient with the slow pace of change? Will they continue to support existing collaboration without the reinforcement of broader improvements? Will they add to or move on from individual collaborative programming to efforts to influence the development of public policy?

One determining factor will be the condition of the economy. If an economic downturn continues there will be an increase in the availability of competent high-tech workers. The pressure on government to insure that schools produce such workers will decline. Increased economic pressure would also distract the agency from collaborative efforts with the schools as the nation attends to its own survival.

The second determinant will be the degree of public education's responsiveness to the need for broad change and improvement. The

government cannot be expected to continue its involvement in the schools if it perceives the effort to proceed in a vacuum. The record so far shows that the partnerships that have survived more than a few years are those than can demonstrate significant accomplishment.

We doubt that this collaborative partnerships could be the crucial force in effecting radical structural reform in the delivery of education. Since the program was grafted onto existing efforts, it does not have the structural position to fundamentally alter the delivery of education. Rather, we see that these collaborations have powerful potential--to create an educated, influential constituency in government for higher education of minorities in the energy curricula.

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